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EXAMINER	
DAGOSTA, STEPHEN M	

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,781	VISWANATH ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *44-71* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *44-55,57-61,63-66,70 and 71* is/are rejected.

7)☒ Claim(s) *56,62 and 67-69* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment

The examiner acknowledges the preliminary amendment and changes to the specification, claims and drawings.

- The Abstract changes were not received. Can the applicant please resend these changes (?). The only Abstract in the file contains too many words and would be objected to by the examiner.

"...The abstract should be in narrative form and is ***generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words***. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details..."

Restriction

The primary examiner notes that the independents do not all recite the same invention, ie. claims 44, 49, 51 and 70 recite using a time-varying phase shift while claim 63 recites determining channel conditions.

The applicant is invited to amend the claims such that they all contain a common "theme". Should the applicant not amend the independent claims to all recite similar material, the examiner will restrict the case in his next office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 44-45, 47-49, 51-52 and 70 rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu et al. 6,034,987 and further in view of Ramesh et al. US 6,371;619 and Weerackody US 5,305,353.

As per **claims 44, 49, 51 and 70,** Chennakeshu teaches a method of transmitting data between a first device and a second device (figures 2-4 show transmitting between two devices), comprising the steps of:

providing a plurality of N separate antennas, said plurality including at least a first antenna and a second antenna, N being a positive integer greater than one (figures 2-4 show both the transmitter circuitry and receiver circuitry having more than 1 antenna);

operating the first device to transmit from the first antenna, a first signal including said data the first signal having a carrier frequency, fc, a broadcast region from the first antenna including the second device (C6, L6-28 teaches sending a signal via an antenna);

operating the first device to transmit from the second antenna, a second signal including said data the second signal having the same carrier frequency, fc, as the first signal, a broadcast region from the second antenna including the second device (C6, L6-28 teaches sending a signal via a second antenna to the same receiver whereby the second antenna's signal is phase shifted) **but is silent on** at least one of a phase and an amplitude of the second signal varying over time relative to the first signal.

It is the primary examiner's opinion that Chennakeshu discloses a constant phase shift which is not time varying between the two antennas.

Ramesh teaches time-varying a signal between two antennas:

The first transmit path 121a processes the information in the usual fashion, with the RF modulator 122a converting the signal to the appropriate channel frequency, the amplifier 124a boosting the signal strength, and antenna A transmitting the signal. The second transmit path 121b operates similarly, but the information is optionally delayed one symbol by delay block 126 prior to being passed on. In addition, when FCCH information is being processed, the phase shifter 128 applies a time-varying

phase shift to the information before passing the same to the RF modulator 122b. Thus, a time-varying phase shift (or complex gain) is added to the signal transmitted from antenna B. One approach to applying a time-varying phase shift is to apply a simple gain toggle of +1 and -1 to the FCCH information. (C4, L59 to C5, L5)

Further to this point Weerakody teaches time-varying the phase of replicated signal sent to multiple antennas:

A plurality of symbol copies is made and each copy is weighted by a distinct time varying function. Each antenna transmits a signal based on one of the weighted symbol copies. Any channel code may be used with the invention, such as a convolutional channel code or block channel code. Weighting provided to symbol copies may involve application of an amplitude gain, phase shift, or both. The present invention may be used in combination with either or both conventional interleavers and constellation mappers. (abstract)

The first illustrative embodiment of the present invention introduces very small time varying phase offsets .theta..sub.1 (n) and .theta..sub.2 (n) to the signals transmitted at antennas T.sub.1 and T.sub.2, respectively. These offsets have the effect of a slow rotation of the phasors S.sub.1 and S.sub.2. If .theta..sub.1 (n) and .theta..sub.2 (n) take on different values, S.sub.1 and S.sub.2 will destructively interfere with each other only for a small fraction of time. If a channel code is employed, this technique can be used to reduce the deep fades shown in FIG. 1(a). (C4, L18-27. Also see claims 4 and 6)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that at least one of a phase and an amplitude of the second signal varying over time relative to the first signal, to provide means for using both constant and time-varying phase shifts to reduce fading/interference.

As per **claim 45,** Chennakeshu teaches claim 44 **but is silent on** wherein the phase of the second signal varies over time relative to the phase of the first signal, the method further comprising the step of:

introducing a variation into the phase of the second signal as a function of time prior to operating the second antenna to transmit the second signal.

Both Ramesh and Weerakody teach a variation of phase for the second signal as a function of time prior to this second signal being transmitted – see claim 44 above).

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that the phase of the second signal varies over time relative to the phase of the first signal, to provide means for using both constant and time-varying phase shifts to reduce fading/interference.

As per **claims 47-48,** Chennakeshu teaches claim 45, wherein the first device is a base station and the second device is a mobile station (see C7, L39-47 teaches using the system in a cellular environment which inherently contains mobiles and base stations as the devices involved in communications).

As per **claim 52,** Chennakeshu teaches claim 51 **but is silent on** wherein the transmitter circuit includes means for independently varying the phase of at least one of the first and second data signals as a function of time.

Ramesh teaches time-varying a signal between two antennas:

In addition, when FCCH information is being processed, the phase shifter 128 applies a time-varying phase shift to the information before passing the same to the RF modulator 122b. Thus, a time-varying phase shift (or complex gain) is added to the signal transmitted from antenna B. One approach to applying a time-varying phase shift is to apply a simple gain toggle of +1 and -1 to the FCCH information. (C4, L59 to C5, L5)

Further to this point Weerakody teaches time-varying the phase of replicated signal sent to multiple antennas:

Weighting provided to symbol copies may involve application of an amplitude gain, phase shift, or both. The present invention may be used in combination with either or both conventional interleavers and constellation mappers. (abstract, (C4, L18-27. Also see claims 4 and 6).

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that the transmitter circuit includes means for independently varying the phase of at least one of the first and second data signals as a function of time, to provide means to reduce fading/interference.

Claims 46 and 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu/Ramesh/Weerackody in view of Todd et al. US 6,359,901.

As per **claim 46,** Chennakeshu teaches claim 45, **but is silent on** further comprising the step of controlling the rate at which data is transmitted as part of the first signal as a function of transmission channel quality information.

Todd teaches "...the BER experienced in the channel may be used to adjust the data rate of outgoing messages based on some a priori minimum acceptable quality of service. Thus, if 3 dB of additional gain is required to meet a required speech quality level, then the communications plane bypasses the intervening layers to direct the application layer to adjust the data generation rate down by one-half. Or, in some communication modes an adjustment of the processing gain via hop bandwidth or

direct sequence spreading could also be used at the physical layer to achieve the required improvement in BER..." (C12, 1-12)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that the step of controlling the rate at which data is transmitted as part of the first signal as a function of transmission channel quality information, to provide means for transmitting at a data rate which can be handled by the communications channel based on it's current quality.

As per **claim 50,** Chennakeshu teaches Claim 50 **but is silent on** claim 49, further comprising the steps of:

introducing a variation into the phase of the second signal as a function of time prior to operating the second antenna to transmit the second signal; and

controlling the rate at which data is transmitted as part of the first signal as a function of transmission channel quality information.

Both Ramesh and Weerakody teach a variation of phase for the second signal as a function of time prior to this second signal being transmitted – see claims 44/50 above).

Todd teaches "...the BER experienced in the channel may be used to adjust the data rate of outgoing messages based on some a priori minimum acceptable quality of service. Thus, if 3 dB of additional gain is required to meet a required speech quality level, then the communications plane bypasses the intervening layers to direct the application layer to adjust the data generation rate down by one-half. Or, in some communication modes an adjustment of the processing gain via hop bandwidth or direct sequence spreading could also be used at the physical layer to achieve the required improvement in BER..." (C12, 1-12).

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that it introduces a variation into the phase of the second signal as a function of time prior to operating the second antenna to transmit the second signal AND controls the rate at which data is transmitted as part of the first signal as a function of transmission channel quality information, to provide means for using phase shifting to reduce fading/interference based on the current link quality.

Claim 53 rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu/Ramesh/Weerackody in view of Weerackody #2 US5,589,439 and Todd.

As per **claim 53,** Chennakeshu teaches claim 52, **but is silent on** further comprising:

a receiver for receiving communications channel condition information; and

means for determining the rate at which data should be transmitted in said first and second data signals as a function of the communications channel information.

Weerackody#2 teaches "The present invention uses switched antenna diversity to reduce the effects of multi-path fading on slow fading channels and thus the number of ARQ re-transmissions that are needed. The switched antenna diversity of the present invention is responsive to the negative acknowledgement of the ARQ and hybrid ARQ protocols rather than the explicit channel condition messages and requests to switch antennas associated with dynamic thresholding. (C3, L11-18) Hence Weerackody#2 does teach that one skilled uses channel condition messages.

Todd teaches "...the BER experienced in the channel may be used to adjust the data rate of outgoing messages based on some a priori minimum acceptable quality of service. Thus, if 3 dB of additional gain is required to meet a required speech quality level, then the communications plane bypasses the intervening layers to direct the application layer to adjust the data generation rate down by one-half...." (C12, L1-12)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that a receiver for receiving communications channel condition information AND means for determining the rate at which data should be transmitted in said first and second data signals as a function of the communications channel information, to provide means for determining a data rate based on the quality of the channel at a certain instant.

Claims 54-55 and 61 rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu/Ramesh/Weerackody in view of Tiedemann US 5,914,950.

As per **claim 54-55,** Chennakeshu teaches claim 52, **but is silent on** further comprising:

a receiver for receiving communications channel condition information from a plurality of mobile stations regarding the condition a communications channel associated with individual ones of said plurality of mobile stations; and

means for scheduling transmission of data to individual mobile stations as a function of the received communications channel condition information **AND**

wherein the means for scheduling includes a scheduling routine which gives preferential treatment to the scheduling of data transmissions to mobile stations with

good communications channels as compared to mobile stations with poorer communications channels (Claim 55).

Tiedemann teaches "When the measured E.sub.b /(N.sub.o +I.sub.o) is lower than the set point, the FER at the cell is likely to be high. In this situation, the inner power control loop attempts to increase the transmit power to maintain the measured E.sub.b /(N.sub.o +I.sub.o) at the set point. If this fails and excessive PER occurs, channel scheduler 12 recognizes that the channel condition is degraded and can place remote station 6 in the hold state until the channel condition improves." (C20, L41-49)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that a receiver for receiving communications channel condition information from a plurality of mobile stations regarding the condition a communications channel associated with individual ones of said plurality of mobile stations; and means for scheduling transmission of data to individual mobile stations as a function of the received communications channel condition information **AND** wherein the means for scheduling includes a scheduling routine which gives preferential treatment to the scheduling of data transmissions to mobile stations with good communications channels as compared to mobile stations with poorer communications channels, to provide means for determining channel quality for each link and scheduling mobiles depending upon the quality of their link, to provide means for determining channel quality information and scheduling transmissions based on the quality.

As per **claim 61,** Chennakeshu teaches claim 51, **but is silent on** further comprising:

means for using a fixed amount of power to transmit the combination of the first and second data signals over time.

The examiner notes that both mobile and BTS are power constrained. There is not an infinite amount of power available for transmission.

Tiedemann teaches power control for cellular transmissions -- "When the measured E.sub.b /(N.sub.o +I.sub.o) is lower than the set point, the FER at the cell is likely to be high. In this situation, the inner power control loop attempts to increase the transmit power to maintain the measured E.sub.b /(N.sub.o +I.sub.o) at the set point. If this fails and excessive PER occurs, channel scheduler 12 recognizes that the channel condition is degraded and can place remote station 6 in the hold state until the channel condition improves." (C20,L41-49)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that it uses a fixed amount of power to transmit the combination of the first and second data signals over time, to provide means for power control support to adjust the power as required within the limits of the system.

Claims 57-60 rejected under 35 U.S.C. 103(a) as being unpatentable over Chennakeshu/Ramesh/Weerackody/Tiedemann in view of Sezai US 5,296,863.

As per **claims 57-60,** Chennakeshu teaches claim 54, wherein the first and second data signals have the same center/carrier frequency, fc and a wavelength W at the center frequency (use of same carrier/center frequency for data sent from multiple antennas but with a phase-shift, these signals inherently have a wavelength W, Abstract and figures 2-4)

but is silent on

wherein the first and second antennas are spaced at least one half the distance the wavelength W from each other.

Sezai teaches "FIG. 5 is a graph showing the simulation result of present beam compression obtained when the antenna system is made up by a main antenna comprising 20 array elements arrayed in the X direction with intervals of half-wavelength, each array element being in the form of a half-wave dipole antenna with a reflector (leaving a distance of 1/4 wavelength therebetween) of which dipole axis is coincident with the Y direction, and a sub antenna comprising the same 3 array elements arrayed in the X direction with intervals of half-wavelength, the sub antenna being spaced half-wavelength from the main antenna, and the angle a is set to 2/3 of the angle b. (C4, L37-49)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that wherein the first and second antennas are spaced at least one half the distance the wavelength W from each other, for improved operation based on using only one antenna and/or antennas not spaced in this fashion.

Claim 64 rejected under 35 U.S.C. 103(a) as being unpatentable over Todd in view of Weerackody #2.

As per **claim 64,** Todd teaches claim 63, further comprising:

a plurality of additional mobile stations (figures 3-4 show mobiles/slaves),

but is silent on

the base station receiver receiving additional communications channel condition information regarding the condition additional communications channels existing between the base station and said additional mobile stations.

Weerackody#2 teaches "The present invention uses switched antenna diversity to reduce the effects of multi-path fading on slow fading channels and thus the number of ARQ re-transmissions that are needed. The switched antenna diversity of the present invention is responsive to the negative acknowledgement of the ARQ and hybrid ARQ protocols rather than the explicit channel condition messages and requests to switch antennas associated

with dynamic thresholding. (C3, L11-18). Hence Weerackody does teach that one skilled does sometimes use channel condition messages.

Todd teaches "...the BER experienced in the channel may be used to adjust the data rate of outgoing messages based on some a priori minimum acceptable quality of service. Thus, if 3 dB of additional gain is required to meet a required speech quality level, then the communications plane bypasses the intervening layers to direct the application layer to adjust the data generation rate down by one-half...." (C12, L1-12)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that the base station receiver receiving additional communications channel condition information regarding the condition additional communications channels existing between the base station and said additional mobile stations, to provide means for determining channel conditions that will support cellular communications.

Claim 65 rejected under 35 U.S.C. 103(a) as being unpatentable over Todd in view of Weerackody #2 and Tiedemann.

As per **claim 65,** Todd teaches claim 64 **but is silent on**, further comprising:

means for determining the order in which the base station is to transmit data to different mobile stations as a function of said communication channel condition information and said additional communications channel condition information.

Tiedemann teaches "When the measured E.sub.b /(N.sub.o +I!sub.o) is lower than the set point, the FER at the cell is likely to be high. In this situation, the inner power control loop attempts to increase the transmit power to maintain the measured E.sub.b /(N.sub.o +I.sub.o) at the set point. If this fails and excessive PER occurs, channel scheduler 12 recognizes that the channel condition is degraded and can place remote station 6 in the hold state until the channel condition improves." (C20, L41-49)

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that there's means for determining the order in which the base station is to transmit data to different mobile stations as a function of said communication channel condition information and said additional communications channel condition information, to provide means for holding transmission to poor quality devices and transmitting to good quality devices.

Claim 66 rejected under 35 U.S.C. 103(a) as being unpatentable over Todd in view of Weerackody #2/Tiedemann and Weereackody and Ramesh.

As per **claim 66,** Todd teaches claim 65, **but is silent on** wherein the base station further includes:

at least a first and second antenna for broadcasting first and second signals including the same data to one of said mobile stations, the first and second signals having different phases.

Ramesh teaches time-varying a signal between two antennas:

In addition, when FCCH information is being processed, the phase shifter 128 applies a time-varying phase shift to the information before passing the same to the RF modulator 122b. Thus, a time-varying phase shift (or complex gain) is added to the signal transmitted from antenna B. One approach to applying a time-varying phase shift is to apply a simple gain toggle of +1 and -1 to the FCCH information. (C4, L59 to C5, L5)

Further to this point Weerakody teaches time-varying the phase of replicated signal sent to multiple antennas:

Weighting provided to symbol copies may involve application of an amplitude gain, phase shift, or both. The present invention may be used in combination with either or both conventional interleavers and constellation mappers. (abstract, (C4, L18-27. Also see claims 4 and 6).

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that at least a first and second antenna for broadcasting first and second signals including the same data to one of said mobile stations, the first and second signals having different phases, to provide means for reducing fading/interference.

Claim 71 rejected under 35 U.S.C. 103(a) as being unpatentable over Channekeshu/Weereackody/Ramesh in view of Weerackody #2.

As per **claim 71,** Chennakeshu teaches claim 70 **but is silent on** comprising:

receiver circuitry for receiving a signal from a base station; and

means for generating communications channel condition information from the signal received from the base station.

Weerackody#2 teaches "The present invention uses switched antenna diversity to reduce the effects of multi-path fading on slow fading channels and thus the number of ARQ re-transmissions that are needed. The switched antenna diversity of the present invention is responsive to the negative acknowledgement of the ARQ and hybrid ARQ protocols rather than the explicit channel condition messages and requests to switch antennas associated

with dynamic thresholding. (C3, L11-18). Hence Weerackody does teach that one skilled does sometimes use channel condition messages.

It would have been obvious to one skilled in the art at the time of the invention to modify Chennakeshu, such that receiver circuitry for receiving a signal from a base station and means for generating communications channel condition information from the signal received from the base station, to provide means for determining channel condition and sending messages describing the conditions.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 63 rejected under 35 U.S.C. 102(e) as being anticipated by Todd.

As per **claim 63,** Todd teaches a communications system, comprising:

a mobile station; and a base station, (abstract teaches a wireless system which is interpreted as being a mobile cellular system that inherently includes mobile and BTS)

the base station (see figures 4-5 which show a BTS) including:

a receiver for receiving communications channel condition information regarding the condition of a first communications channel existing between the first device; and

means for determining the rate at which data is transmitted to said mobile station as a function of the channel condition information (Todd teaches "...the BER experienced in the channel may be used to adjust the data rate of outgoing messages based on some a priori minimum acceptable quality of service. Thus, if 3 dB of additional gain is required to meet a required speech quality level, then the communications plane bypasses the intervening layers to direct the application layer to adjust the data generation rate down by one-half. Or, in some communication modes an adjustment of the processing gain via hop bandwidth or direct sequence spreading could also be used at the physical layer to achieve the required improvement in BER..." (C12, L1-12)

Allowable Subject Matter

Claim 56, 62 and 67-69 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

For Claim 56, the prior art of record does not teach, alone or in combination:
"further comprising means for determining the rate at which data should be transmitted in said first and second data signals as a function of the communications channel information".

For Claim 62, the prior art of record does not teach, alone or in combination:
"further comprising means for varying the relative amplitudes of the first and second data signals as a function of time while maintaining the combined average transmitted power of the first and second data signals at an almost constant value over the period in time during which the relative amplitudes of the first and second data signals are varied".

For Claim 67, the prior art of record does not teach, alone or in combination:
"wherein the base station further includes: at least a first and second antenna for broadcasting first and second signals including the same data to one of said mobile stations the first and second signals having different amplitudes".

For Claim 68, the prior art of record does not teach, alone or in combination:
"wherein the base station further includes: means for introducing signal variations into signals transmitted to the mobile stations so that the mobile stations will detect fluctuations in received signal power".

For Claim 69, the prior art of record does not teach, alone or in combination:
"wherein said means for introducing signal variations into signals includes a plurality of antennas for transmitting the same data in parallel".

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Voorman US 4,485,357
2. Holden et al. US 6,411,655
3. Dent US 5,815,531
4. Wheatley III US 5,577,265
5. Chennakeshu et al. US 5,991,331
6. Smith et al. US 6,212,242
7. Martin et al. US 5,960,039
8. Kageyama et al. US 4,882,614
9. Salt US 6,389,085

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta
Primary Examiner
9-30-2005